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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|-------------------------------------|------------------|
| 10/601,398 | 06/23/2003 | Yu-Hong Shih | TSAI/0005 | 7741 |
| 7590 10/01/2004 | | | | |
| WILLIAM B. PATTERSON MOSER, PATTERSON & SHERIDAN, L.L.P. Suite 1500 3040 Post Oak Blvd. Houston, TX 77056 | | | EXAMINER KALIVODA, CHRISTOPHER M | |
| | | | ART UNIT 2883 | PAPER NUMBER |
| DATE MAILED: 10/01/2004 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------------|-------------------------------|---|
| Office Action Summary | Application No. 10/601,398 | Applicant(s) SHIH, YU-HONG | |
| | Examiner Christopher M. Kalivoda | Art Unit 2883 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment received July 19, 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-13 and 15-17 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-13 and 15-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>08/09/2004</u>.</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____</p> |
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DETAILED ACTION

Response to Arguments

Applicant's arguments, filed July 19, 2004, with respect to the rejection(s) of claim(s) 1-17 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Schultz et al. U.S. Patent 6,672,901 in view of Schacter, U.S. Patent 4,044,888.

Essentially, the new grounds of rejection is as follows: Schultz et al. is concerned with small form factor transceivers and teach using pluggable transceiver modules plugged into a socket on a PCB where the direction of plugging is also parallel to the PCB as amended. Based on Fig 4, it certainly "appears" as if golden finger electrical connections are used for the electrical connection. Schacter describes these types of electrical connections and provides excellent motivation for their use so the two references are combined.

Regarding the administrative changes, the changes to the claims and specification are approved the corresponding objections are withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 8-13 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schultz et al. U.S. Patent 6,672,901 in view of Aronson, U.S. Patent Application Publication 2003/0180011.

Regarding independent claim 1 as amended, Schultz et al., describe a pluggable optical transceiver module (col 1, lines 20-25) comprising an optical fiber connecting interface (col 1, lines 18-20 and col 4, lines 14-18, especially line 18) connecting with an optical fiber, an optical signal transceiver (col 1, lines 18-20) connecting with the optical fiber connecting interface for processing optical/electronic signals and a connecting interface inserted into a corresponding socket (col 1, lines 40-44 and Fig 4, ref sign 4) mounted on a printed circuit board (Fig 4, ref sign 3) in a direction parallel to the printed circuit board (see Fig 4), the connecting interface connecting with the optical signal transceiver to transmit the electronic signals (col 1, lines 40-44).

However, the reference is silent with respect to the use of the term golden finger connecting interface. Please note that in Fig 4, ref sign 4 clearly shows a type of interface that "appears" to be golden finger type interface and is reminiscent of the type of connection one sees with printed circuit boards in computers.

Schachter describes the use of "gold finger" connecting interfaces for use with printed circuit boards and mating with cooperating connectors (sockets) (col 6, lines 63-68, col 7, lines 1-3 and Fig 17).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Schultz et al. and use "golden finger" connecting interfaces as taught by Schachter for the purpose of permitting repeated

Art Unit: 2883

connection and disengagement from a printed circuit board connector without impairment of the electrical characteristics of the resulting connection (col 7, lines 20-25).

Regarding claim 2, Schultz et al. in view of Schachter teach the limitations as described above. In addition, the golden finger interface makes use of printed circuit board technology to print the golden fingers (col 7, lines 4-7).

Regarding claims 3 and 4, Schultz et al. also teach the optical signal transceiver comprises an optical signal transmitter that is a laser diode (col 4, lines 14-18).

Regarding claims 5 and 6, Schultz et al. also teach the optical transceiver comprises an optical signal receiver that is a photodiode (col 4, lines 14-18).

Regarding claim 8, Schultz et al. teach the transceiver module comprises a corresponding socket (Fig 4, ref sign 4) with an interface corresponding to the golden finger connecting interface since the module is pluggable.

Regarding claim 9, the transceiver module comprises a single channel bi-direction (col 4, lines 14-18) small form factor optical transceiver module (col 1, lines 20-25).

Regarding independent claim 10, Schultz et al describe a bi-directional (col 4, lines 14-18) small form factor optical transceiver module (col 1, lines 20-25) comprising an optical fiber connecting interface (col 1, lines 18-20 and col 4, lines 14-18, especially

Art Unit: 2883

line 18) connecting with an optical fiber to transmit optical signals; an optical signal transmitter (col 4, line 14-18, especially line 15) connecting with the optical fiber connecting interface to transform output electronic signals into output optical signals, an optical signal receiver (col 4, lines 14-18, especially line 15) connecting with the optical fiber connecting interface to transform input optical signals into input electronic signals (col 4, lines 39-42) and a connecting interface inserted into a corresponding socket (Fig 4, ref sign 4) mounted on a printed circuit board (Fig 4, ref sign 3) in a direction parallel to the printed circuit board (see Fig 4), the connecting interface connecting with the optical signal transmitter and the optical signal receiver to transmit the input electronic signals and the output electronic signals.

However, the reference is silent with respect to the use of the term golden finger connecting interface. Please note that in Fig 4, ref sign 4 clearly shows a type of interface that "appears" to be golden finger type interface and is reminiscent of the type of connection one sees with printed circuit boards in computers.

Schachter describes the use of "gold finger" connecting interfaces for use with printed circuit boards and mating with cooperating connectors (sockets) (col 6, lines 63-68, col 7, lines 1-3 and Fig 17).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Schultz et al. and use "golden finger" connecting interfaces as taught by Schachter for the purpose of permitting repeated connection and disengagement from a printed circuit board connector without

Art Unit: 2883

impairment of the electrical characteristics of the resulting connection (col 7, lines 20-25).

Regarding claim 11, Schultz et al. in view of Schachter teach the limitations as described above. In addition, the golden finger interface makes use of printed circuit board technology to print the golden fingers (col 7, lines 4-7).

Regarding claim 12, Schultz et al. also teach the optical signal transceiver comprises an optical signal transmitter that is a laser diode (col 4, lines 14-18).

Regarding claim 13, Schultz et al. also teach the optical transceiver comprises an optical signal receiver that is a photodiode (col 4, lines 14-18).

Regarding claim 15, Schultz et al. teach the transceiver module comprises a corresponding socket (Fig 4, ref sign 4) with an interface corresponding to the golden finger connecting interface since the module is pluggable.

Regarding claim 16, Schultz et al. show the corresponding socket (Fig 4, ref sign 4) is mounted in an electric appliance (Fig 4) with a pluggable single channel bi-directional small form factor optical transceiver module.

Regarding claim 17, the transceiver is a small form factor optical transceiver module as described above but is silent with respect to the dimensions of the transceiver being about 0.5 in wide.

Such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art (St Regis Paper Co. v Bemis Co., 193 USPQ 8).

Art Unit: 2883

Therefore, it would have been obvious to use a transceiver that is about 0.5 inches wide for the purpose of increasing the package density by using as little space as possible on the circuit board.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Application Publication 2003/0180011 describes golden finger type connections. U.S. Patent 6,705,764 describes pluggable transceiver module plugged into a socket in a manner parallel to a PCB.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 2883

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Kalivoda whose telephone number is (571) 272-2476. The examiner can normally be reached on Monday - Friday (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


cmk


Brian Healy
Primary Examiner